

What is claimed is:

1. A valve timing adjusting device comprising:

a first rotor rotating synchronously with a crankshaft of an internal combustion engine;

a second rotor secured on an end face of an intake camshaft of the engine or an exhaust camshaft, and provided relatively rotatably within the first rotor by only a predetermined angle;

a rotation regulating member provided within one rotor either of the first rotor and the second rotor, for regulating a relative rotation between the first rotor and the second rotor when the relative position reaches a predetermined position; and

an engaging hole formed within the other rotor either the first rotor and the second rotor, for receiving an engagement of the rotation regulating member when the relative rotation between the rotors is being regulated; wherein surface treatment is given to an internal surface of the engaging hole and a surrounding area of opening of the engaging hole.

2. The valve timing adjusting device according to Claim 1, wherein the surface treatment is oxide-film forming treatment.

3. The valve timing adjusting device according to Claim 1, wherein the surface treatment is quench hardening.

4. The valve timing adjusting device according to Claim 3, wherein the engaging hole to be hardened is formed such that

the hole opens on a cuttable flat surface.

5. The valve timing adjusting device according to Claim 3, wherein the quench hardening is partial quench hardening by induction hardening.

6. The valve timing adjusting device according to Claim 1, wherein surface treatment is given to the engaging hole formed in either one face of the first rotor or that of the second rotor opposing the one face of the first rotor with a clearance left therebetween.